

1 **Abstract of the Invention**

2 A free weight assistance and training device includes a base
3 and a generally upright weight support structure mounted on and
4 extending upwards from and over the base. A free weight support
5 bar is connected to a computer-controlled weight tensioning device
6 which is mounted on the base generally adjacent the upright weight
7 support structure, the connection between the free weight support
8 bar and the computer-controlled weight tensioning device consisting
9 of at least two cables movably mounted on the upright weight
10 support structure. The computer-controlled weight tensioning
11 device, the at least two cables and the free weight support bar
12 operatively cooperate with each other such that tensioning force
13 applied by the computer-controlled weight tensioning device via the
14 at least two cables to the free weight support bar controllably
15 decreases the amount of downwards force exerted by the free weight
16 support bar and weights thereon.